actKM Online Journal of Knowledge Management

Volume 2, Issue 1
2005
ISSN: 1834-3554

Developing strategic capability through a knowledge network communication work space

C.E. Ryan, D. Rhodes, and B. Millett

www.actkm.org
Proceedings from the actKM Sixth Annual Conference 2005

This journal and individual papers published at www.actkm.org

First published in Australia in 2005 by actKM Forum

ISSN: 1834-3554 (Online)

Cover design by actKM Forum.

Copyediting by Maxine James.

The actKM Online Journal of Knowledge Management is a peer-refereed journal. Full papers submitted for publication are refereed by the Consulting and Associate Editors through an anonymous referee process.

Developing Strategic Capability through a Knowledge Network Communication Work Space

C.E. Ryan, University of Southern Queensland
D. Rhodes, University of Southern Queensland
B. Millett, University of Southern Queensland

Abstract

The USQIndex – The Knowledge Network (USQ-KN) is designed to facilitate staff collaboration, knowledge integration and use through a common communication space both within and across university divisions. It utilises a logically central information and knowledge repository that reduces the opportunity for information and knowledge silos to develop and improve the management of access, search, and discovery. USQ-KN further offers knowledge workers the capability to work asynchronously or synchronously on tasks and projects, reduces the opportunity of having multiple working versions of the same work documents on individual desktops, reduces Email attachment traffic, and has the potential to reduce time to task or project completion.

This paper focuses on USQ-KN's pilot study within the Faculty of Business (FOB), which has operationalised the network as a communication space for the strategic management of the faculty. Eight key faculty decision points were identified and the communication space was developed around these decision points. The faculty's resource centre was developed and 'experts' identified at each decision point to be the gatekeeper for the publication of resources to ensure the quality, relevance, timeliness, and security of the available resources.

Initial implementation of the pilot has been in the faculty's administration department. An initial workshop of administration staff was conducted to introduce USQ-KN and to encourage staff ownership. The administration decision point was chosen as the initial implementation site, and performance evaluation measures defined as current usage rates, intention to continue use, as well as interviews of users and/or intended users. Outcomes indicate that there is a favourable perception of the benefits of USQ-KN and an ongoing intention to continued use.

Introduction

Government policy is driving Australian Universities to move from their traditional positions of non-profit service providers to Australian students, to transnational profit- producing educational service providers. Student recruitment in the international market is effected through business agreements with agencies or partners familiar with the local environment. Governments in these countries often have local requirements with which these agreements must comply. Many partnership agreements require the partner to offer students face-to-face teaching support. While the partner employs the local academic staff, the university must vet and approve the appropriateness of their qualifications and experience to deliver the specific course(s) and monitor their delivery. Communication between all parties, management, partners, academics, and students becomes very complex and challenging as differences in business, educational, and cultural expectations arise. Maintenance of academic standards and workplace best practice becomes an ongoing challenge as program portfolios and course curricula evolve in response to the range of learning styles, student educational backgrounds and market demand. Much strategy is recommended to management by committees, with committee members collaborating to make decisions that will solve complex and sometimes difficult problems. To do so, they need knowledge of internal and external environments (Eisenhardt, 2004), and ready access to a wide variety of the status and trends to assist them

The actKM Online Journal of Knowledge Management, Volume 2, Issue 1, 2005 www.actkm.org
 ISSN: 1834-3554 (Online)
Paper presented at the actKM Sixth Annual Conference.
Canberra, Australia, 26-27 October 2005

respond successfully. While much of the data was available, it was not easily accessible to all. Improved access within a broader communication space where collaboration between committee members could be supported was seen as a high priority. Investigations suggested that the addition of a user-focused Intranet to the communication space, could improve access to the data, information, and knowledge required to support strategic decision-making. The faculty's section of the USQIndex – Knowledge Network (USQ-KN) was designed to encourage more effective use of its corporate knowledge to support its strategic business plan (Davenport & Prusak 2000, p ix – x).

Recognising that knowledge exists only within the context of a community and needs to be recreated in the act of knowing when a problem needs to be solved (Merleau-Ponty, M 1962), the USQ-KN is designed to facilitate the development and use of knowledge through collaboration by providing a common communication space that spans both within and across university divisions. It utilises a logically central information and knowledge repository that aims to reduce the development of knowledge silos and to improve the management of access, search, and discovery. USQ-KN further offers knowledge workers the capability to work asynchronously or synchronously on projects, reduces the opportunity of having multiple working versions of the same work documents on individual desktops, reduces Email attachment traffic, and has the potential to reduce time to project completion. Together these have the capacity to facilitate processes that exploit interaction between expert tacit knowledge and up-to-date explicit knowledge (Nonaka & Takeuchi 1996).

USQ-KN

The USQ-KN is implemented using Microsoft SharePoint Products and Technologies, Microsoft Internet Information Services, Microsoft SQL Server and Microsoft Office Systems. The advantage that SharePoint has over other knowledge management systems in this environment, is that it is fully integrated with the most widely-used desktop productivity tool of USQ employees – Microsoft Office. While the various information and knowledge management systems today provide similar capabilities and functionalities, this system offered these functionalities with a relatively user-friendly interface, and at little extra software cost.

The system offered:

- efficient ways:
    - of discovering and accessing documents regardless of where the documents are situated on the Intranet;
    - of identifying and communicating with experts in specific areas; and
    - for work groups to collaborate with one another electronically via tools such as common workspaces with version control of documents, discussion lists, and surveys.
- a whole of organisation repository that is logically central but physically distributed allowing ease of information discovery;
- a high level of security;
- ability to:
    - enforce common quality-bound industry standards;
    - access via a single login;

- push content to nominated staff;
- allow nominated external entities (such as partners, AUQA, etc) to view content;
- automatically alerts users when changes are made to their work area; and
- allow users to use current software to work on documents.

FOB–KN Background

The faculty has had an Intranet for many years, but in recent times it had become apparent that it posed considerable problems in the areas of accessibility, usability and data redundancy. Data and information files were organised using folders for the primary categories. Permissions to particular categories (folders) tended to be given in an ad hoc manner. Any staff member could create categories within their Intranet space, again on an ad hoc basis, and store, by creation or copying, whatever files they wished and then give permission to other staff to use as required. Over a number of years, these work practices resulted in a complex maze of categories, many of which were duplicated in a number of areas with considerable redundancy evolving in the system. While this method proved to be effective for staff who used particular data sets on a regular basis, occasional users and new staff found the system exceedingly difficult to use. Clearly a more efficient system was needed if the faculty was to meet the challenges posed by the changing educational milieu.

Design

From its inception the FOB-KN was designed to be a communication space where staff members could be adequately supported in their decision-making. While recognising that the Intranet would be a vital element in that communication space, it was acknowledged that a wider range of tools were needed to create a user-friendly space that would support faculty collaboration as an integrated part of their daily work activities. The collaboration might be face-to- face, electronically, or, as is more typical, a combination of both. So the collaborative work space might include any of the collaboration technologies such as Email, discussion lists, the Intranet (Johnson, 1991) or face-to-face discussions that were supported by data or information accessed synchronously or asynchronously during the discussion.

The faculty had the nucleus of a knowledge network with well-equipped meeting spaces and associated equipment for Intranet and Internet connectivity including teleconferencing and videoconferencing facilities. Staff members, particularly academic staff members, were familiar with the use of these technologies as part of their work activities. However, the inefficiency of the Intranet was a considerable concern and seen as a drawback to improving the efficiency of collaboration and decision-making. A more efficient system was needed.

A top down method was chosen for this phase as initial planning highlighted the need to conceptualise the whole workplace clearly in order to identify areas of existing efficiencies and inefficiencies. Areas of inefficiencies could be examined to identify support gaps and define ways to narrow the gaps. Intranet planning would focus on providing support to the areas of greatest need. The outcome of this initial investigation is the *Planning and Performance Management in the Faculty of Business: Critical Decision Points and Profiles of Operational Environment,* (see Figure 1). Figure 1 has two main features. First, it illustrates the four layers or spheres of influence that the Faculty is continuously attempting to synthesise with the institutional mission, value and goal statements. At the core, students, potential students and alumni are seen as the key group of stakeholders towards which the

Faculty's priorities and activities are directed. The second layer surrounding the core is the Faculty's portfolio of programs and courses that provide the connectivity with the core and positions the Faculty in the transnational business education marketplace. The third layer represents the strategic capability of the Faculty to develop and deliver a relevant and effective portfolio of program and course offerings. Finally, the operating environment provides the context in which Faculty decision-making takes place.

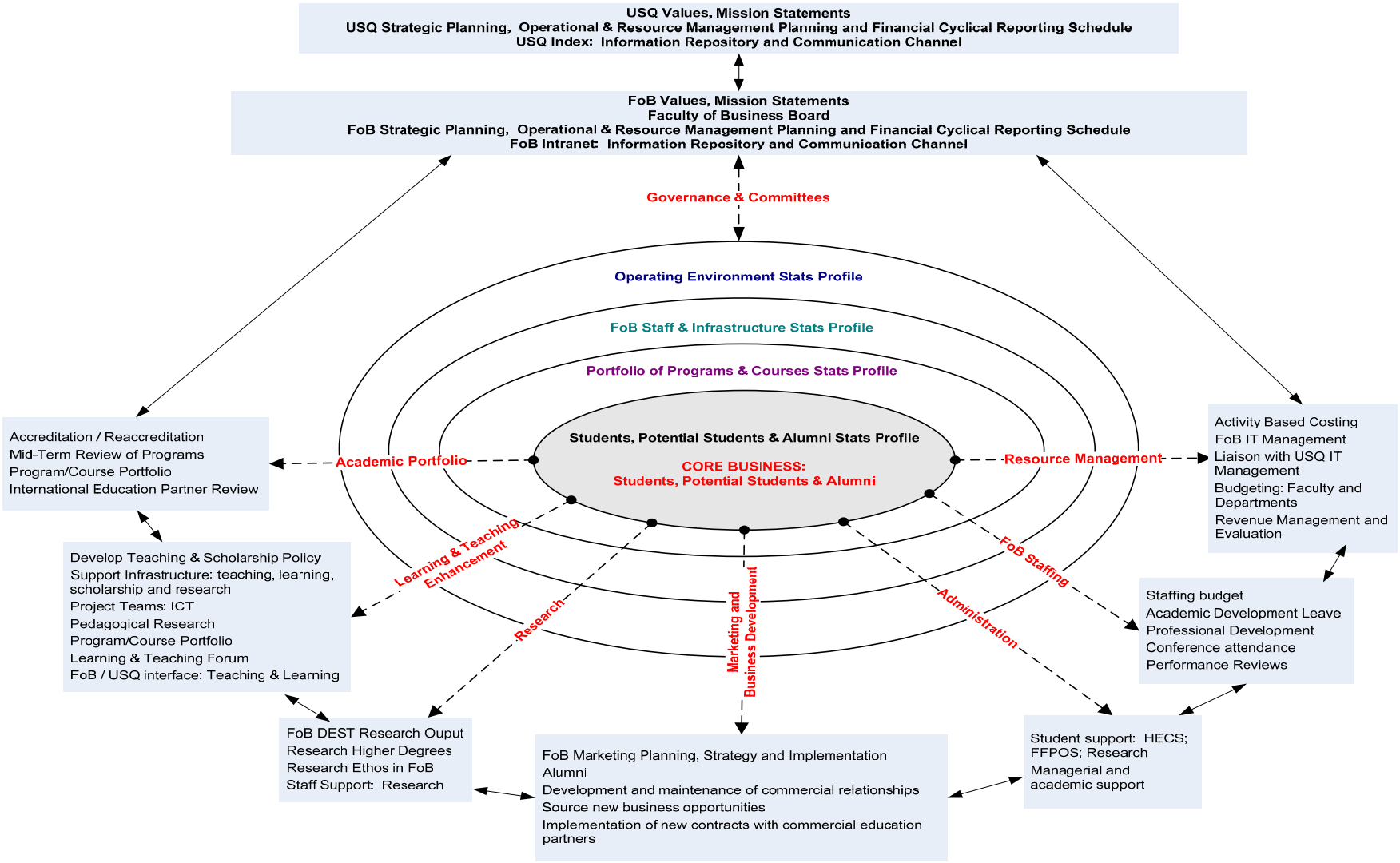

Figure 1 FOB Critical Decision Points

The second feature of Figure 1 is the identification of eight critical decision-making areas in the Faculty. They represent the functional and intuitive areas of activity that leverage concerted action towards high-performance outcomes. The eight areas are concerned with governance mechanisms, resource management, staffing, administration, marketing and business development, research, learning and teaching, and the accreditation and reaccreditation of programs of study. These areas were the starting point in the design, development and implementation of the FOB-KN.

The initial steps were to identify a common and 'intuitive' index for each decision point and to involve user groups in the system's design (Preece, 1994, p. 46-7). This was particularly important as the Faculty consists of two major staff groups, academic and administrative. While they work cooperatively and effectively towards common outcomes, they tend to have differing views of how knowledge and its underpinning information and data should be categorised. Card sorting was chosen as an appropriate method to achieve a common index. Card sorting is a user-centred design technique commonly used in the human factors field to gain insight into the mental models of users (Nielsen & Sano, 1994). Such insight can guide the identification of patterns by which users find content (Maurer & Warfel 2004).

Card Sorting – Design

The FOB-KN project leader, faculty administration officer and project assistant had an initial meeting at which they identified as many topics included in the current Intranet as they could and added any known topic gaps using the storyboard method. Over 90 topics were identified and each was transferred to an individual card and used as the initial card sets.

Three groups were formed to review and categorise this card set. The exercise was designed as a simple user-oriented design method to ascertain users' mental models of the way the organisation worked and the semantic networks that defined organisational categories and the links or relationships between objects (Collins & Loftus 1975). Group membership was chosen to ensure a broad representation from each work function and level within the faculty. They included section leaders, academics, program administrators, administration staff, and information technology staff. Their task was to organise the faculty content into logical categories and suggest a meaningful tag for each category that could be used to build the Intranet's navigation. New topics suggested by the groups were added to the card set given to the subsequent group(s). The first group identified and named five groups, the second and third groups eight each. The groups' categories contained a very high level of commonality with the original eight decision points, in a sense validating the original eight, but were given different tags by the user groups. Subsequently the names identifying the eight decision points were amended to the user groups' preferred tags, Academic Portfolio, Learning and Teaching Enhancement, Research, Marketing and Business Development, Administration, FOB Staffing, and Resource Management.

A less obvious but essential aim of the card sorting exercise was to encourage early support and ownership of the Intranet section of the FOB-KN by the user group. User group representation encourages users to take ownership of the decisions made during the consultation as it ensures that those decisions are made within the context of their working environment and reduces the opportunity for important topics and categories to be overlooked.

Implementation

The FOB – KN was developed using the faculty's eight critical decision points as its category structure. A senior faculty staff member was given ownership of each decision point and the

responsibility of overseeing its development as a small project that would be successful within the bigger project (Peters 2004). This staff member would be the instrumental leader (Nadler & Tushman 1990), advocate (Davenport & Prusak 2000) or champion (Bettis & Hitt 1995) of their section. As *intrapreneurs*, they would need to 'seek novel ways' of gaining compliance in the use of the knowledge network (Skyrme, 2000).

At first glance the FOB-KN might be seen as a document management system and it could be used simply for that purpose. However its functionality should be seen as one element in a wider group of tools that support the documentation and communication of the collaborative work of the faculty particularly in the coding and sharing of best practice, creation and dissemination of a faculty expertise index, and the facilitation of the knowledge network (O'Dell & Grayson 1998). The internalisation of knowledge only occurs within individuals' minds when they interpret and make sense of the new information within the context of their observations, concepts, and judgements (Alavi & Leidner 2001).

An important consideration was an acknowledgement that, in the changing university environment, staff have workloads that are very demanding. Any suggestion that the new system might add to their workload was likely to meet considerable resistance so the new processes would need to be able to replace their current work practices. A bottom up method was employed in the implementation phase to encourage the rapid integration of the new work processes. Further implementation of each decision point was staged on a needs only basis. This was to ensure that individuals were introduced to the new system only when their work could be done more or just as effectively via the network than previously. The new process would be an integral part of their daily work and would not add to their workload (Davenport & Prusak 2000, pp. x-xi).

This paper will focus on the use of the knowledge network as a knowledge management system supporting the collaborative work within one decision point, the Academic Portfolio and in particular the sub section of accreditation.

Collaborative work

In the accreditation section of the Academic Portfolio, committees collaborate in the development of academic programs for accreditation or the review of current programs for reaccreditation. When proposing the introduction of a new program, the program development team's duty is to: develop an academically sound program; demonstrate its fit within the faculty's and university's program portfolio; and identify the demand for such a program, the most appropriate mode(s) and campus of offering, its potential competitors, and develop a detailed business case. Program reaccreditation requires additional historical information of student enrolments, retention rates, student feedback and industry feedback.

Academic and industry experts from a variety of different (but related) areas work together in a Program Development Team to ensure a program that meets a defined academic standard and industry requirements. As the development team works through the various issues a set of accreditation documents have to be developed. The USQ-KN FOB Accreditation subsection provides a central communication space for the evolving documentation. The space can be accessed by all members of the team and relevant team members. Version control of documents is implemented to ensure a record is kept of the evolution process. If required, changes can be readily reversed. Administration staff can be given access to ensure university and faculty standards are being followed particularly for those sections of the documentation that will, upon accreditation, be published in the University Handbook.

A significant advantage of this central repository for the collaborative development of the documents is the maintenance of one central copy of each document. Group members have traditional meetings to discuss the program's structure and agree on a common direction for developing a strong case for the program's accreditation or reaccreditation. Between meetings, members use the central repository to access the documentation and contribute their expertise. The documents are progressively developed as expert knowledge is integrated (Tiwana 2002, pp. 91-2) or fused (Davenport & Prusak 2000, pp. 59-62) to produce a well-researched and argued case for the particular program. This process continues until the documentation is ready to be submitted to the various accreditation committees. Unlike the previous system where multiple copies of the documents resided on multiple computers, team members can be confident that the document they are working on is the latest version.

The implementation strategy has been very successful. However there is a continuing role for the champion to encourage change to old work practices towards maximum use of the system. For example, when a suggestion is made that files be Emailed to team members, the champion recommends that they be posted to the Intranet. Progressively the strategy is receiving a high level of compliance and is gradually reducing the number of files Emailed within the group.

A recent initiative is the use of the survey facility to follow up on conditional decisions made at Faculty Board. Once the conditions discussed at the Board meeting have been met, Board members are sent the URL of the updated documents and given the option of endorsing or requesting a return to Faculty Board for further discussion. These surveys have been well supported and have the potential to reduce the time spent at the board meeting on procedural matters.

Typically a number of accreditations/reaccreditations are being developed concurrently. The communication space ensures that accreditation leaders can readily assess the status of any particular accreditation, allowing them to take appropriate action if processes are being neglected or timelines are being exceeded. A flow-on effect is the reduction of the number of attachments received via internal Email, which in turn reduces the frequency that the Email account exceeds maximum storage capacity. Once maximum storage capacity is reached urgent action is required to reduce Email content or the Email account is frozen until its size it reduced.

Evaluation

The champions or leaders of the sections, particularly the accreditation section, believe it has introduced considerable efficiencies to their workload and continue to be very supportive of the system. From their perspective they have received the cooperation they require.

Interviews were conducted in July with a number of users to evaluate the rate of acceptance and uptake. In general interviewees indicated support for the knowledge network and believed that it had great potential as a repository for sharing information and documents. Some saw it as a place to work on common documents, reduce redundancy in documents, and reduce the need for meetings. Individuals described their personal level of usage from heavy to low with one person indicating that her usage had changed from heavy to low as a result of a change of position. One thought that navigation around the Intranet was difficult and needed to be improved. A number discussed the need for changes in work practices to be managed.

At first glance the results seem to indicate a difference between the section leader's perception and the other users in use. Could it be that this difference indicates that the communication space is being used appropriately? It is a space where members conduct specific tasks and look for information and knowledge as they require it in their work. Currently not all decision points have been implemented so that they may also be contributing to users' perception of under-use. Requests for a more rapid implementation are increasing as staff within the faculty express a desire for their area to become available.

Faculty system support staff have also received requests from outside the faculty for assistance to implement areas for them. At the USQ-KN level, requests for a faster rollout are also increasing.

The Future

The FOB-KN will continue to roll-out all other decision points over the next few months. Information sessions are currently being conducted to explain different aspects of the knowledge management system. Brainstorming to create innovative ways of use and possible future additions/changes is being encouraged.

The inaugural meeting of a university wide Knowledge Network User Group has been held to share and develop expertise in the use of the communication space. The development of a sustainable Yellow Pages to allow staff to find people/areas with a particular expertise or skills as they need assistance is currently under investigation.

References

Alavi, M. & Leidner, D.E. 2001, 'Review: Knowledge management and knowledge management systems: Conceptual foundations and research issues', *MIS Quarterly*, vol. 25, no. 1: pp. 107–36.

Bettis, R. & Hitt, M. 1995, 'The new competitive landscape', *Strategic Management Journal,* vol. 16, no. 1, pp. 7-19.

Collins, A.M. & Loftus, E.F. 1975, 'A spreading-activation theory of semantic processing', *Psychological Review,* vol 82, pp.407-28.

Davenport, T. & Prusak, L. 1998, *Working knowledge: how organisations manage what they know,* Harvard School Press, Boston

Eisenhardt, K.M. 2004, 'Speed and Strategic Change: how managers accelerate decision making', *The human side of managing technological innovation,* ed R. Katz, pp. 508-18, Oxford University Press, New York.

Johnson, R. 1991, *Leading Business Teams,* Addison-Wesley,

Maurer, D. & Warfel, T., 2004, Card Sorting: a definitive guide, 7 April 2004. Viewed online http://www.boxesandarrows.com/archives/card_sorting_a_definitive_guide.php

Merleau-Ponty, M. 1962, *The Phenomenology of Perception,* Routledge & Kegan Paul, London.

Nadler, D.A. & Tushman, M.L. 2004, 'Beyond the Charismatic Leader: Leadership and Organizational Change', *The human side of managing technological innovation,* ed R. Katz, pp. 103-20,, Oxford University Press, New York.

Nielsen, J. & Sano, D. 1994, 'SunWeb: User Interface Design for Sun Microsystem's Internal Web' in the *Electronic Proceedings of the Second World Wide Web Conference '94: Mosaic and the Web*, 1994.

Nonaka, I. & Takeuchi, H. 1996, 'A theory of organisational knowledge creation', *IJTM Special publication on unlearning and learning, 11(7/8), pp. 833-45.*

O'Dell, C. & Grayson, C.J. 1998, 'If we knew what we know: Identification and transfer of internal best practices'. *California Management Review*, vol 40, no 3,pp. 154–174.

Preece, J 1994, *Human-Computer Interaction*, Addison-Wesley, Workingham.

Tiwana, A 2002, The Knowledge Management Toolkit:Orchestrating IT, Strategy, and Knowledge Platforms, Prentice Hall, Upper Saddle River, New Jersey.

Peters, T.J. 2004, 'A Skunkworks Tale', The Human Side of Managing Technological Innovation; A Collection of Readings, 2nd ed, R Katz, pp. 405-13

Skyrme, D.J. 2000, Knowledge Networking: creating the collaborative entrerprise, Butterworth Heinemann, Oxford.